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REGULATION AND THE LOCATION OF JURISDICTIONAL POWERS: THE FISHERY*

By ANTHONY SCOTT**

I. INTRODUCTION

This article, partly about fishing regulation, is placed at the constitutional level. For that reason it does not, and should not, deal with the variability of political policy-decisions under differing constitutional arrangements. Quite different decisions might emerge from centralized than from decentralized regulatory powers, and yet others might be implicit in the working of individual property rights under "de-regulation" of the type sketched in the final sections. My position is that amplified in the third paragraph: the assignment of powers and our attitude to centralization ought to be independent of the subsequent policies adopted under those powers. This position, an adaptation of the Breton-Scott view of the assignment of regulatory powers to different levels of government, is conveyed in Part II; the constitutional position regarding fisheries' regulation in Canada is detailed in Part III; and a critique in the form of a proposal for a new system of regulation with new constitutional bearings is sketched in Parts IV and V.

In the process I have adapted the writing of others with little attention to the accuracy of the attribution; for this an apology is owed. The most important aspects of many other studies of regulation have been played down: relationships among those who are being regulated; who the regulators are; what they hope to gain in a public-choice sense from their activities and decisions; and so forth. These very important matters do play a role in Part II, for they all come into the organization costs of different assignments of a regulatory function. Other subjects slighted here are the raising of revenue incidentally to fisheries regulation, and the "competitive" behaviour of provinces given powers that can attract industry or revenues. These two questions should enter any decision about the assignments of regulatory powers in a federation.

This study does not rely on the concept of economic efficiency in fisheries operations for its views on the efficient assignment of fisheries' regulatory power. Efficiency does play a large part in many studies of fisheries' regulation including those of this writer. But we cannot in one decision settle all problems. There are too many variables. The assignments of powers problem requires that we keep track of such matters as the preferences of various actors

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* Organizers of the symposium and participants made useful comments. In addition, I must thank Professors P.A. Neher, P.H. Pearce and A.R. Thompson for valuable suggestions, most of which I have attempted to incorporate. My debt to Albert Breton is revealed throughout Part II.

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in fisheries' regulation; their effectiveness in getting their way; the distinction between allocation of resources and distribution of the gains from fishing; and the dimensions of a federal structure. To superimpose on these variables the familiar theoretical welfare-economics criterion by which governments have been judged by their success in achieving economic efficiency in the fishery and everywhere else would be too much. Hence so far as is humanly possible for an economist, this central theme in much writing about the choice of actual fisheries' regulations has been suppressed, surfacing only in connection with the aim of minimising organizational costs (Part II).

In short, this is an exploratory study in which ideas on federal powers have been applied to the assignment of one function: the regulation of the common-property fishery. In one section the best level of government to which to assign this power is suggested. But the suggestion has not been widely tried out. What is hoped for is that the line of argument will become clear enough to obtain general discussion.

II. THE OPTIMAL ASSIGNMENT OF REGULATORY FUNCTIONS AMONG CENTRAL, PROVINCIAL AND LOCAL GOVERNMENTS

This part explains the approach followed by Breton and Scott in *The Economic Constitution of Federal States*.¹ Although treatment of regulatory powers in that book is brief, it also implies that a more complete discussion would follow the treatment of other "allocational" functions or powers of government. These include, in addition to regulation of the private sector, supply of government services and the raising of revenue.

We may think of a constitution as providing the details of a framework. This framework, like that of a building, has dimensions. "Government" makes policies and administers them within this framework. The framework creates governments and gives each functions, revenue sources, rules for representation, and rules for decision-making. For example the Canadian federation's constitutional dimensions provide for three levels of government, in the units having such-and-such geographical boundaries, in the provinces having powers over property and civil rights and over their public domains, in the assignment of indirect taxation to the top level of government and in the parliamentary system of election decision-making and administration. Once decided on, these dimensions tend to become permanent. Hence they can be expected to be adopted with greater deliberation, retained longer, and changed with greater cost than would policies. Policies, on the other hand, spring from day-to-day decisions by governments working within a framework which they regard as fixed. Economic policies are made by the exercise of powers over or functions concerning the traditional triumvirate: allocation, distribution and stabilization. A constitutional provision concerning one of the federal dimensions becomes thereafter a "rule" prescribing and limiting each jurisdictional level's future behaviour. The federal dimensions, taken together, determine the extent to which the various functions are centralized or dispersed among governmental levels.

¹Breton and Scott, *The Economic Constitution of Federal States* (Toronto: University of Toronto Press, 1978) esp. chs. 3, 5 and 7.

Hence, the overall degree of regulatory centralization is the weighted sum of the number of functions that have been assigned to the central government. A constitutional act of centralization would therefore involve either reducing the number of levels of government, depriving the lower levels of regulatory powers, or both.

A country usually does not have an opportunity to significantly change the overall degree of centralization of all activities by reassigning particular functions, for there are too many of them. The familiar allocation-distribution-stabilization triumvirate merely classifies three aspects of hundreds of types of policy present in almost all types of legislation and policy. Thus, a possible re-assignment of powers to regulate, such as those over fisheries, is best discussed on its individual merits rather than as a part of a general trend to centralize or regionalize policy-making. In what follows, an assumption is made to ensure that the discussion of the fishery is distinguished from any such campaign.

In introducing this section, a distinction was made between policies and constitutional dimensions. Some policies become embodied in goods or services that are virtually pure public goods. The lighthouse, important in fisheries, is a classic example. The benefits of a lighthouse are, up to a point, equally available to all. Other policies become embodied in what Breton has called "non-private goods"² and what other authors have referred to as "quasi-public goods". Examples are police and fire protection, and the international rules of law and order. Fisheries regulation, and the degree of concentration of fish stocks, which have a profound effect on the costs of finding and catching fish, would also fit into this category. The benefits non-private goods yield accrue to all, but in uneven amounts, or accrue to only a fraction of the population. A third product of public policy is the virtually private good: when provided by government or by regulation, its benefits are available only to the individuals to whom it is deliverable,³ and its use by one person reduces the amount available for others by an equal amount.⁴ A ton of fish added to a stock by a public hatchery, or saved from early catching by public controls, becomes a private good for whomever eventually lands it.

As already indicated, fisheries depend on unmarketed and sometimes unmarketable products of public policy. Those who accept a "market-failure" criterion for public intervention must concede that a *prima facie* case for considering special policies concerning fisheries has already been suggested.

Fisheries, however, is much more interesting than this degree of "publicness" would suggest. Private fishing activity is replete with interdependencies. Fish as private goods are migratory, and indeed cannot usually be said to be under the control of vessel or fleet until they are caught. Thus each vessel's activities create benefits and costs for other vessels engaged in finding or catch-

² *Id.* at 36.

³ Lawyers and public financiers will notice a symmetry between the definition of a direct tax and a private good.

⁴ Pigou referred to it as "exhaustible". Pigou, *The Economics of Welfare* (4th ed. London: Macmillan, 1960).

ing precisely as described in the theories of external economies or diseconomies. The mere presence of a vessel conveys useful information to other vessels; its catching reduces or disperses the concentrations which could have lowered other vessels' fishing costs, and, of course, its catches leave fewer fish swimming to be caught by others.

In the same way, the net benefits of governments' fish-conservation or fish-management policies are experienced not only by the vessels that comply with the rules, but also by vessels that do not comply. These other vessels may, for example, be exempted from the controls, flout them, or be subject instead to the controls of some other country or jurisdiction. In this sense, the effect of government policies spills over into other jurisdictions. Policy-makers realize that their decisions have a close interdependency with those of adjoining jurisdictions.

When such interdependencies exist, the public-economy literature seeks an answer to the inefficiencies they create by inventing devices that "internalize" the decisions as to their amounts. The remedies in general range from *controls*, wherein the internalization is almost entirely at the governmental level, through *fiscal devices*, whereby the actors are guided to government goals in least-cost fashion, to the reform of individual *property rights*, whereby it is hoped that individual market decisions will "automatically" release government from day-to-day participation. Pigou, following Marshall, suggests taxes and subsidies.⁵ Those concerned with natural resources and land suggest adjustment of property rights.⁶ For example, the question of how to deal with "neighbourhood effects" of land use has been answered by such devices as voluntary covenants, zoning and a finer description of the enforceable rights and obligations of each land user with respect to other users. This mode of solution has been much discussed. In the 1950s I myself declared that ideal private decisions about how quickly to exhaust resource stocks depended on complete or "specific" ownership of fugitive or durable natural assets. It was suggested, for example, fishery's optimum management was what would be achieved under "sole ownership". There was a personal uncertainty as to whether what was urged was that completely specific or sole ownership should actively be sought, or whether the easily-imagined results of such ownerships should merely be set as ideals for the looser forms of real-world fisheries management. In any case, such imaginary descriptions are no longer regarded as prescriptive. Today, because every natural resource is "naturally" different from every other, and because each produces a wide variety of conflicting and complementary services for different kinds of users, talk of sole ownership or specific tenure reduces one to what Leontief once called "implicit theorizing". The fact that interdependency, spillovers and conflicts arise when everything is not internalized does not logically entail that the best policy is to bring about an internalization. Less drastic reforms may be not only more fair to those already participating in resource use, but also less costly in terms of the resource and its alternatives.

⁵ *Id.* at 192.

⁶ Coase, "The Nature of the Firm", reprinted in American Econ. Assn., *Readings in Price Theory* (Hareward, Illinois: Irwin, 1952) at 331-51.

It has been argued elsewhere⁷ that the common property, spillover-ridden fishing industry cannot be rationalized by reform of property institutions alone. Continuing "on-line" management of fish stock and fishermen will probably be necessary. This view is maintained in what follows. *Complete* deregulation is never examined. Rather, the question of the assignment of regulatory powers is explored.

The ubiquity of externalities and spillovers in fisheries has made it an often referred to sector when considering the assignment of government responsibilities between levels of government, and "internalization" has played a prominent role in debating the most ideal assignment. For example, it can be argued that efficiency calls for jurisdictional boundaries to coincide exactly with the "span" or "scope" of the services a government provides and the regulations it enforces. This is because in its political decisions on these matters, a government will consider the costs of taxation and compliance and benefits to its own citizen-residents. Jurisdictions can generally be expected to inadequately provide services or controls that benefit outsiders, the worse the fit of a service's technical "span" to the jurisdictions' geographical boundaries, the more deficient will be their provision of services and regulations. A moderate version of the argument concludes that powers to provide a service ought to be assigned to that level of government having jurisdictional areas closest to the typical span of the service provided. But the approach has had disappointing results. True, some light is shed on a useful role for inter-jurisdictional grants. But as Breton and Weldon⁸ agreed in the mid-1960s, and as Breton and Scott make clear in *The Economic Constitution of Federal States*⁹ and in the *Design of Federations*,¹⁰ arguing from a desire to internalize spillovers produces little that is useful to the theory of federalism itself. This theory certainly has not helped much in determining which level of government should be charged with the provision of particular policies.

Two approaches have been attempted. Under the approach implied by sole ownership all powers are assigned and all boundary lines are drawn so as to eliminate the interdependencies of government activities. It has been found that this approach leads to the conclusion that decision-making, bureaucracy, enforcement, finance and provision should be highly centralized. In particular a number of writers have concluded that powers to redistribute or to stabilize (that is, to purposely apply macroeconomic policies) should be assigned to the highest level of government.¹¹ Furthermore, because "no man is an island" and because the economy, the ecology, the environment and their hydraulic-oceanic-meteorologic interdependencies stretch endlessly around the globe, it must be concluded that every other public function should also be assigned to top-level decision-makers. Federalism and national sovereignty just become irritating man-made obstacles to solving unbounded problems. Clearly this ap-

⁷ Scott and Neher, eds. *Public Regulation of Commercial Fisheries in Canada* (Ottawa: Econ. Council of Cda., Min. of Supply and Services, 1981).

⁸ Breton and Scott, *supra* note 1, at 41n.

⁹ *Id.*, ch. 4.

¹⁰ Breton and Scott, *The Design of Federations* (Montreal: Institute for Research on Public Policy, 1980).

¹¹ See, e.g., Oates, *Fiscal Federalism* (New York: Harcourt, 1972).

proach provides a handy rationale for unitary world government, but no guidance as to where to stop before that limit is reached.

The second use of this approach is more sophisticated. It consists of balancing advantages against disadvantages in deciding where to assign certain powers. Using complete centralization, justified as above, as a starting point, those who use this approach seek to gain the advantages of decentralizing the assignment of functions. At the most fundamental level there is the notion most powerfully put in *The Federalist Papers* (1787) — but rarely explicit in Canadian writing — that federalism provides economic and political individual liberty. This is because under federalism political powers and the attendant individual coercion are fragmented among jurisdictions. Furthermore, the same fragmentation leads to competition among the units. Federalism is neither necessary nor sufficient for, but certainly facilitates, an escape from coercion.

While the notion of decentralization was put forward by Madison and his colleagues in terms of political liberty, it also has important economic analogues. Economists have argued that federal structures allow citizens to choose between “bundles” of public services and regulations offered by governments of different provinces or other units. The more jurisdictions the federation has, the more easily and inexpensively the citizen can shop around for his preferred mixture of public and private goods, taxes and regulated activities. Furthermore, the smaller size of each jurisdiction makes it less expensive for citizens to successfully signal their desires to the government. Finally, the task of each government in responding to these signals is made less costly because political mobility, mentioned as the first point above, can also have the effect of making the preferences of each provincial population more homogeneous and hence easier to satisfy.

These advantages of the decentralization of regulation and supply suggest that they are substantial offsets to the “internalizing” advantages of centralization. Thus there appears to be a neat solution to the problem of finding the right degree of centralization in allocating rights and powers. As the process of decentralization increases both the costs of spillover and the benefits of satisfying local preferences, the correct solution is to stop the process when the marginal costs are just balanced by the marginal benefits. This process is suggested by many writers, and comes very naturally to economists; Oates builds his model around it.¹²

It has been suggested¹³ that this second approach has three major difficulties. First, it is non-operational. Neither the benefits nor the costs are observable or even dimensionally homogeneous. Second, benefits and costs are not independent. The freedom of choice and liberties of the subject in a unitary state are not a simple fraction of those in a fragmented economy. Instead, both the structure of the economy and the rents and surpluses of the consumer may be qualitatively different with each increase in decentralization. Third, the approach confuses powers with policies or performance. Even if the

¹² *Id.*

¹³ Breton and Scott, *supra* note 1, ch. 4.

first two difficulties could be ignored, the optimal degree of decentralization would appear to depend on what parties chose to legislate. Consequently, there would be no stability in the assignment of powers; each new election would make the assignment just as vulnerable to amendment as lists of statutes and orders.

Both the simple "internalize-the-spillovers" approach, and the equally non-operational "marginal benefit equals marginal cost" approach are unfavourable. Instead, another approach is advocated — one anticipated by both Coase and Tullock in other contexts.¹⁴ This approach is based on co-ordination. Governments providing regulation or supplying goods and services do not need to re-assign their powers to deal with transboundary interdependencies. Rather, it is only necessary for these governments to continue to do what they already do: agree about which and how much of each spillover should continue. This may be called "co-ordination", but it also involves co-operation, joint production, parallel legislation and outright purchase, compensation or bribery. Flows of spillovers can be exchanged against each other (transactions in kind) or against cash (grants and transfers).

Any kind of co-ordination has costs that are conceptually separable from the production costs of providing goods, services and regulations. All such costs (similar to transactions costs) may be called "organization costs". Accordingly, the best assignment among governments of all powers to spend, tax and regulate is that which minimizes the required associated total of organization costs.

Organization activities use up scarce resources. Not only must one consider the costs of co-ordination, which may eliminate the disadvantages of spillovers, but one should also consider the governments' costs of administration and the citizens' costs of signalling and political mobility. These four types of organization costs are defined as being all-inclusive; every organizational activity comes under one of the four heads. Are these costs fixed, or do they vary with the way in which powers are assigned among jurisdictions? To show that they may vary, and so can be minimized, imagine that the *other* costs of government, however assigned, are fixed, or at least independent of organization costs.

If, for example, the power to regulate an activity, such as fishing, is under constitutional consideration, how would the four types of organization cost vary under complete centralization as compared to under complete decentralization? Consider co-ordination first. In fishing regulation this cost is never zero. Even when there is only one government, co-ordination with other states over ocean activities, and with other levels of government over uses of lakes, streams and seas that conflict with biological management and economic profitability is a costly activity. If the regulatory power is assigned to even more numerous, "lower" levels of government co-ordination costs will necessarily increase. One important reason for this is obvious: fish do not respect jurisdictional boundaries. Hence, biological and economic policies can

¹⁴ Tullock, "Federalism: Problems of Scale", *Public Choice*, v. 61 Spring 1969 at 19-30.

be nullified if agreements are not made among neighbours. The costs may well be greatest when each jurisdiction has only a few neighbours. This may be so because negotiation might take the form of non-competitive bilateral bargaining, similar to the upstream-downstream problem in transfrontier environmental bargaining. The downstream power often has nothing, except money, to offer to the upstream power for its co-operative abstention from, for example, catching all the fish that downstream policies have protected.

Even when the jurisdictions are more evenly matched, and can co-operate on an equal basis, Christy and Scott,¹⁵ Munro¹⁶ and others have shown how difficult coming to a mutually profitable agreement on managing a single fish stock can be.

Now consider administration costs. These stem from the setting-up and operation of institutions not directly needed for the provision of public services. Two costs that immediately come to mind are the costs of decision-making in a representative government, and the associated costs of obtaining technical and political information about alternative policies and about the distribution of the benefits and burdens of these alternatives. Buchanan and Tullock in *The Calculus of Consent*¹⁷ referred to these costs as the "costs of decision-making". Such costs will probably be greatest when there is complete centralization of power over fishing. In this circumstance, the decision-makers not only must familiarize themselves with the problems and opportunities in separate fisheries, but also must investigate the pros and cons of combinations of nationally uniform, rather than regionally-differing, policies. Because they must investigate their political support under these alternatives, they indeed would seem to have internal difficulties, politically and administratively, equivalent to the external difficulties of co-ordination if many small and separate governments, each responsive to its own electorate, had to harmonize their respective fisheries policies.

Between the unitary and small extremes of centralization there may lie an internal minimum of government organization costs. For example, it is possible that assignment of regulation powers to each government along its own coast would cut down combined political and technical information costs, and the costs of internal agreement and external co-ordination. Some amount of inter-jurisdictional bargaining would be required in any case. There cannot be any *a priori* forecast as to which level of assignment will cut co-ordination costs to their lowest amount. In any case, government organization costs involve both co-ordination and administration, and these may decrease as the degree of centralization of regulation is increased. Consider elected fisheries governments, which might be local, provincial, regional, or national to take only four possibilities. Co-ordination costs would decline as a unit's area increased and

¹⁵ Christy, Jr. and Scott, *The Commonwealth in Ocean Fisheries* (Baltimore: John Hopkins, 1965) chs. 2 and 10.

¹⁶ Munro, "The optimal management of transboundary reasons", *C.J.E.*, v. 12 Aug. 1979 at 22.

¹⁷ Buchanan and Tullock, *The Calculus of Consent* (Ann Arbor: Univ. of Michigan Press, 1962).

boundary problems became fewer and more internalized. But administration and political costs would generally increase, reflecting the problems of searching for localized preferences and compromising between them. Furthermore, administration and political costs would be extremely high if a new form of elected jurisdiction were inserted between other levels of government for just one fishery. For example, an elected Canadian Atlantic fisheries legislature, directly representing voters in all four Atlantic provinces and charged with all their fisheries matters, would be in an anomalous position, somewhat similar to that occupied by an elected school board in municipal affairs. In such narrow-function governments, implicit vote-trading and log-rolling are extremely difficult, not only because most elected members have intense feelings about most items on their agendas, but also because their reciprocal negotiations with more conventional governments in the area can rarely be improved by "linking" problems of unequal concern to the parties. While such an intermediate-level body seems most appropriate, there are two other patterns of administration that might have lower organization costs. One pattern is to share the powers, allowing them to be occupied concurrently by both senior and junior levels of government. An application of this pattern to fisheries shall be discussed below.¹⁸ The other pattern is to *appoint* a non-elected administrative and regulatory council including decision-making personnel drawn from both levels of government.

In practice, such federal-provincial or provincial-municipal bodies usually are information-exchanges and co-ordinators rather than regulators.

What about the response of citizens' organization costs to the assignment of regulatory powers? The usual argument would be that compliance (and complaining) costs for fishing regulations are least when both politicians and administrators are locally-elected and appointed. It has been almost too easy for those who are regulated to complain about the unresponsiveness of government whose seat is remote. Such regulators are said to be "unresponsive" to local problems, but surely national politicians are just as eager to be re-elected as local politicians. There is, then, no obvious reason why their interest in regulatory policies should be different. Another frequent argument is that central governments are *usefully* more remote, in that they stand above the local commotion surrounding the regulation of common-property activities. This argument would suggest that central governments *are* less sensitive to local issues than local governments. Comparisons of local and national representatives' responsiveness to local issues are not useful because neither their constituencies nor their powers to act are the same. For example, for debating and bargaining convenience, national constituencies are usually larger than local-legislature ridings. Thus, a national representative may have more industries or activities within his riding than a local member. A local representative member may easily be persuaded to carry the complaints of his voters to his legislature. But this is unlikely to be effective. With a smaller constituency, and hence fewer and less diverse interests behind him, he may have less bargaining power when he gets there. Such a representative may be more "responsive", but his fellow legislators may be less likely to cater to his

¹⁸. See *infra*, Part IV.

priorities. In brief, signalling costs may vary with the size of the jurisdiction to which regulatory powers are assigned, but the direction of the variation is difficult to predict, and indeed, may vary from power to power.

A final issue to canvass in the costs of regulation debate is that of mobility. Citizens who do not like the bundle of policies, taxes and regulations provided by a jurisdiction can, by incurring the costs of citizen mobility, move to another jurisdiction. Such costs naturally fall as the number of alternative jurisdictions increase. It may also be suggested that the exercise of the power to regulate land and ocean resources is unlikely to provoke interjurisdictional mobility. This is because while participants in such industries are already mobile in their fishing activities, they cannot usually take the natural resource with them by "voting on foot". Hence, they move only by changing their occupation. This is tantamount to saying that mobility is probably always too costly a form of citizen response to regulatory policies to be widely used, whatever the degree of decentralization.

In this part, an attempt was made to apply more directly the theory of the assignment of functions in a federal state to the narrower question of the assignment of regulatory powers. A distinction was drawn between powers and policies. Then it was assumed that either level of government could legislate, regulate and provide policies if a power were assigned to them — only their organization costs of doing so would differ. Indeed they could, if they chose, provide the same standards of regulation or public services. It is probable, however, that they would not choose exactly the same policies.

III. THE EXISTING ASSIGNMENT OF POWERS TO REGULATE THE FISHERY

Natural resources are regulated in Canada through two types of authority — authority to legislate and authority stemming from ownership (proprietaryship). Both are mentioned in the *Constitution Act, 1867*,¹⁹ but both also have connections with earlier legal traditions and with international law. The two types of fishery authority do not coincide in Canada, and there are many areas or activities in which uncertainty and conflict can arise, unless co-ordination has cleared the way in advance.

Under the *Constitution Act, 1867*, the federal government obtained powers to legislate with respect to "sea coast and inland fisheries".²⁰ It also received powers to legislate for "navigation and shipping";²¹ "agriculture"²² (which may include aspects of water and land use); "the criminal law"²³ (in-

¹⁹ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, sched. B of the *Canada Act 1982*, c. 11, s. 91(12) (U.K.).

²⁰ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 91(12) (U.K.).

²¹ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 91(10) (U.K.).

²² 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 95 (U.K.).

²³ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 91(27) (U.K.).

cluding some uses of boundary waters under the 1909 Boundary Waters Treaty²⁴ with the United States); and to impose almost any kind of tax or fiscal regime.²⁵ These powers, especially the first-named, are all widely used. Most regulated Canadian saltwater fishermen would mention the federal government as being the authority with whom they deal. But the provincial proprietary power has not been negligible. Under common law the right to fish is an incident of ownership of the land underlying a body of water. Initially, the owner of all land rights, the Crown, could alienate these to the private sector. There also has been long recognized a "public right of fishing" in tidal waters to which the ownership by the provincial Crown, by the federal Crown below low water and by private persons, is subject.

Although differing arrangements remained when the various provinces entered confederation, section 109 of the *Constitution Act, 1867*²⁶ ensured that they generally retained the Crown's ownership of public lands. Consequently, the right to fish continued to be held by the provincial Crown in "inland waters" and the "foreshore", whether these were fresh waters or salt, except to the extent that private persons had received grants from the Crown of beds of lakes and streams and the accompanying right to fish. Later land grants included river and lake beds, and the fisheries above them; these, however, were the exception, the general rule being provincial retention of the beds of rivers lakes and streams.

Under the *Constitution Act, 1867* the provinces also have powers to legislate concerning the Crown lands,²⁷ wide powers over all property and civil rights,²⁸ and powers over industry.²⁹ The first two would enable the provinces to, in effect, change the terms of the arrangements by which lands and rights to fish went into private hands. For example, all inland fish might be declared to be provincial property, whether or not impounded or caught. The proprietary power, however, presumably cannot be changed by provincial statute within the coastal and "inland waters" fringe of the province. Under other heads in the *Constitution Act, 1867*, the provinces also have considerable powers to legislate to control fish processing, especially on shore.³⁰

Thus, there is considerable federal-provincial overlap or "concurrence". On the one hand, the federal government has an exclusive power to legislate concerning all fisheries. This has been held to give Ottawa overriding power to

²⁴ 36 Stat. 2448, III Redmond 2607, 12 Beanans 319.

²⁵ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 91(3) (U.K.).

²⁶ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11 (U.K.).

²⁷ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, ss. 92(5), 109 (U.K.).

²⁸ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 92(13) (U.K.).

²⁹ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 92(10), (16) (U.K.).

³⁰ 30-31 Vict., c. 3 as am. by item 1 of Sched. to the *Constitution Act, 1982*, Sched. B of the *Canada Act 1982*, 1982, c. 11, s. 92(10), (16) (U.K.).

enact regulations and restrictions, including the right to modify or remove the public right of fishing in tidal waters owned by Ottawa (below low water), even if such legislation significantly reduces the value of interests in provincial fisheries. On the other hand, "provisions prescribing the mode in which a private fisheries is to be conveyed or otherwise disposed of, and the rights of succession in respect of it,"³¹ would be provincial. It has also been held that "the terms and conditions upon which the fisheries which are the property of the province may be granted, leased, or otherwise disposed of, and the rights which consistently with any general regulations respecting fisheries enacted by the Dominion Parliament may be conferred therein, appear proper subjects for provincial legislation. . . ."³²

In view of this diversity of legislative powers and ownership rights, and in view of the wide variety of conditions under which fish are protected and fishing is controlled, close co-ordination between federal and provincial authorities has become an obvious part of governments' policies. For example, in some provinces the fisheries' departments patrolling rivers and lakes rely to some degree on orders under the federal *Fisheries Act*,³³ while in others most fisheries' administration is undertaken for both governments by the federal government.

In tidal fisheries, the federal government's powers become more extensive as the distance from the coast increases. In the new Extended Economic Zones (as within the old three-mile limit) only the federal government may regulate. Closer in, the provincial government has proprietary powers over lands in inland waters over which tidal water stands, can exercise powers governing property and civil rights to the extent that marketable property rights licences or catch are created, and does legislate concerning the handling of fish once the act of "fishing" is completed and "processing" begins. Certainly the federal government exercises powers that are most complete in the ocean fishery; and is least effective in controlling the activities in an inshore fishery or in an onshore processing plant.

We may particularize. Management in the form of opening or closing of such important fisheries as salmon, lobster, halibut, cod and herring is undertaken by federal officers. Considerable provincial co-operation, however, is required. Salmon, for example, are anadromous. Thus, the inland protection and enhancement of spawning salmon stocks requires provincial acquiescence or active co-operation. Further, lobsters and oysters are caught in shallow water under conditions in which either the provincial proprietary right or the public right to fish in tidal waters could become as important as federal fisheries power. Finally, cod and herring are caught close inshore in shallow waters by using fixed gear that could be declared to be under provincial property laws, even if their use was still subject to the general federal control over all fish and fishing.

³¹ *A.G. Cda. v. A.G. Ont., Que. and N.S.*, [1898] A.C. 700 at 716 (P.C.).

³² *Id.*

³³ R.S.C. 1970, c. F-14.

³⁴ R.S.C. 1970, c. F-14.

Most federal fisheries powers are enacted under the *Fisheries Act*.³⁴ This *Act* also implements an asserted federal power to prevent inland water pollution or obstruction that might be deleterious to fish. It may be questioned whether the regulation of so many varied activities should properly come under the control of one *Act*. Whether so much anti-pollution policy, for example, can continue to be controlled under a federal fisheries statute is moot. Perhaps even the *Act's* provisions for direct management of inland and anadromous fisheries would not today get past Parliament or the courts.

IV. DETAILED ASPECTS OF FISHERIES REGULATION

Fisheries regulation is not accomplished by a relatively small number of complicated, self-enforced decisions, such as those found in telephone or radio regulation. On the contrary, fisheries regulation is embodied in a multitude of standing rules, one set for each stock of fish or species on each coast. In addition, fisheries management is accomplished by enforcing a large number of "on-line" decisions by which recent seasonal information about fish numbers, spawning, sizes and perhaps markets are converted into orders to "open" or "close" each fishing ground to certain or all types of gear for specified periods of time. The standing rules are discussed and negotiated among conflicting industry and regional groups, politicians, biologists and buyers or packers. They set the general framework within which catching and marketing take place for the next year or two.³⁵

Fishermen, packers and consumers are equally interested in the managers' "on-line" rulings. These are decided quickly and announced by radio and telephone. They almost inevitably affect the fleet unevenly; losers will say unfairly. Migratory stocks that fail to arrive or resident stocks that are unexpectedly prolific, markets that skyrocket or plummet, vessels with new catching power, foreigners who suddenly take an interest, weather, water temperature, land transportation and strikes in other industries, can all force the fisheries' officers to reconsider their initial decisions about when, where and how to bring in the current harvest. In this context, it is common that discussion and debate are replaced by anguished, angry and violent pleas and accusations. Fishermen and processors incur heavy overhead costs and find it useful to remind the decision-makers about how much they stand to lose in interest and inventories if decisions are adverse. In such an atmosphere it is difficult to isolate the chief elements in fishery regulation.

The process can perhaps best be described by using the economic concept of spillover introduced in Part III. Spillovers occur when some effects of an activity are not contained within the enterprise, but are transmitted to help or harm other enterprises. Where the effect spills directly from one party's premises to neighbouring premises, the remedy involves negotiation and agreement leading to a change in the behaviour of the two parties: abatement by the originator plus defensive action of some kind by the victim. Restraint, fences and exit are frequently mentioned.

³⁵ If one or more foreign countries are fishing the same stocks or the same waters, these standing rules must make provision for them. Consequently, the rules will take on even more formal, semi-permanent, legalistic characteristics.

In applying this concept to the fishery, we find that the effects are felt some time after, or many miles away from, the cause. Neither the originator nor the victim of a particular effect can identify the other party. Furthermore, numbers are large and uncertain, and some of the effects may even have a public-good rather than a depletable character. In short, information, enforcement and monitoring are so costly for the individual fisherman that pairwise negotiations and agreements between fishermen rarely take place, and the effect is an uncontrolled spillover.

One way of controlling spillover is internalization or centralization. At one extreme, a single private enterprise can take over management so that stock, harvest and fleet are under one regime for a number of seasons. At the other extreme, a single government service can take over management of stock, harvest and fleet for an indefinite period. Variations on these extremes can be imagined. The single enterprise may actually be a grouping of firms, a fishermen's co-operative, or a joint council. The single government management unit may be an interjurisdictional council with powers to recommend or even with delegated powers to manage and harvest.

Such unified control is seldom found. Instead we observe what economists have described as a common-property fishery under close governmental regulation of private harvesting. There may be completely open access with a public right to fish subject to certain restrictions. Or there may be licencing, with access limited to those who can first obtain a permit. Many variant systems combining restricted access with managed day-to-day fishing exist, the combination depending in part on whether the original fishery was in the high seas beyond national territory or whether it was in a coastal zone. Whatever the combination, the fisherman's bundle of rights is very thin, giving him neither rights to the fish in the water nor to the water itself.

It is not difficult to understand how the many combinations of layers of fishery regulation of access and catching come into being. Consider the following process in a common-property area without government controls. If the relative price of fish in the marketplace rises, the intensity of private fishing will increase and the stock of fish will be threatened by depletion. Even before the fish vanish, costs of finding and landing a full hold will increase, and there will be demands for public regulation of the "over-fishing". This pressure will be quite general, for most vessels and companies are affected to the same extent. Differences in skill and equipment cannot insulate anyone from the scarcity of fish. Incomes become too small to provide subsistence for the crews or to cover the owner's debts. One response is welfare. In Canada, for example, there was a redefinition of unemployment insurance to provide part-time income to workers, plus miscellaneous subsidies or rebates on new vessels, docks, gear and supplies. Obviously, such response is welcome, but it does not address the heart of the problem: the translation of increasing fishing pressure into a fading fish population.

The resultant intervention into the fishery is itself compounded by the effect industry has on politicians, fishing biologists and administrators. Historically, official actions can be explained by saying that the regulators act as if they have a number of different purposes.

Perhaps the first of these purposes is to prevent the speed and capacity of the fleet from continuing to reduce the fish stock annually to a level from

which it cannot quickly recover. Regulators traditionally accomplished this by discriminating against certain fishermen, primarily outsiders. Wars and peace treaties centered on who had fishing rights. Today, the same result is accomplished by licensing, closing the fishery at crucial times and restricting or forbidding the use of particularly destructive gears. Related to this goal of preventing stock depletion is the desire to prevent other fish, caught or damaged in the catching of the main species or size-group, from being inadvertently damaged or decimated. This approach to regulation does not touch the expanded size of fishing power of the fleet. The administrator tries to protect the fish stock and make it available fairly to all vessels. In doing this, the approach is like a police approach to congested city streets, in which the increased number of cars is simply accepted, and an effort is made instead to keep traffic moving by detailed controls, one-way streets and so forth.

The purpose revealed by a second approach is to reduce the total amount of fishing effort that is brought to bear. This has been primarily because when there are too many vessels, the biological goal mentioned above is almost impossible to attain by restrictive controls. Owners equip vessels with more speed and storage capacity in order to make the best of the times when there are no closures. As a result, closures become more frequent. Some fish are therefore nearly wiped out, while others swim through a gauntlet completely unharvested. The genetic composition of the fish stock is also affected by the increasingly sporadic open and closed periods. Furthermore, the regulators find it almost impossible to learn what is happening to the stock when a very large fleet of vessels turns up every time there is to be an opening: often the fishery is to be closed before the regulator receives any information about what has been caught in the brief open period. The *waste* of labour and capital as represented by too many vessels is not itself a concern for this approach to regulations.

Third, regulators wish to act with fairness. Even if they did not, spokesmen and interest groups clearly and loudly express the demands of vessels using different types of gear, fishing from different ports, fishing in different parts of a gauntlet, available to fish in different periods or different weather, or fishing for sport or for profit would insist that their claims be given fair weight. Processors in different places serving different markets with different final products voice their support for certain groups of fishermen. Spokesmen for regions, provincial governments, and ethnic groups also have decided preferences about sharing the harvest. Each decision will produce some losers who are quick to criticize, sometimes in the form of united interest groups and sometimes as independent enterprises. The regulator, in Canada, cannot separate these individual, protective or distributive aspects of his decisions from those aspects in which he is the expert: fish reproduction, migration and growth. It is commonplace that fisheries public policy is more concerned with distribution than with allocation. This is what one would expect when individuals discuss the use of common property.

A fourth purpose of regulators is to make bargains with foreign fishermen or over-the-side buyers and thereafter to arrange this pattern of fishing such that the foreigner gets what he bargained for.

Fifth, regulators sometimes wish to change the nature of the product. For example, they may wish to regulate in such a way that all fish are taken

when they are more valuable, or when they are more reproductive. Another frequent event is for a fishery to move over from a raw-material meal or chemical process of catching fish by the ton to being a food fishery where every fish is a candidate for a final consumer's table, and each must be landed and stored at much greater expense. Another example is the decision in a multi-species fishery to change the emphasis from one species (and its gear and season) to another, although both species are affected by either technique. In a common-property fishery such decisions can rarely be made marginally: the whole fleet must usually move from one gear-time-place-product target to another.

Sixth, they may wish to move the fishery from the capture of wild fish to the harvesting phase of some sort of aquaculture in which the fish are bred, released and caught somewhat as cattle on a range. Once again, such a decision can rarely be made marginally or even experimentally: the whole fishery must adopt the new technique.

In all these aims regulators are supported by more than one interest group and opposed by others. The division of interest is not usually along federal-provincial lines, although each province does, of course, wish to increase employment, income and business activity stemming from fishery activity, even if it must be at the expense of other provinces. But many of the problems are seen as no-win questions for local politicians and are left to the federally-employed regulatory service to resolve as best they can.

In this endeavour, nearly all parties agree that the first and second motives mentioned above call for a reduction in the number of participants. This can be accomplished by reducing the number of licenses by various arbitrary or fiscal means: licenses can be retired, bought in, or taxed; or the industry can be made less attractive by taxation or levies. Each method has been shown to bring a cloud of administrative and economic problems of its own.

I and my collaborators have studied each of these methods, of which some examples do exist. In consequence we have come to prefer over fishing licences a system of catch quotas or landing rights, each assigned to a vessel or captain.³⁶ These are examined in the next seven paragraphs. Ideally, they would be denominated in numbers of fish, and subdivided as to place of capture, species and perhaps time. They would be transferable, and perhaps auctioned anew every year or so.

Much to be preferred to mere transferability would be full marketability and divisibility. Under such a scheme today's paralyzing questions — what port, what gear, what fishermen and so forth — could be handled impersonally in the marketplace. A regulator would still be needed, but his decisions would need only to be announced as a number. This number would have meaning for every quota-holder, confirming, increasing or decreasing his catch of that species at that place to which he was previously entitled. The fisherman at sea who wanted to land more than his new entitlement could buy,

³⁶ Scott and Neher, *supra* note 7. See also Pease, *Conflict and Opportunity Toward a New Policy for Canada's Pacific Fisheries*, a Preliminary Report of the Commission on Pacific Fisheries Policy, Oct. 1981.

or rent, portions of quotas from less keen fishermen. Economists will not need to have spelled out how such a market would work, especially with the instant information produced by radio. Note that the "on-line" regulator is, ideally, freed from making interpersonal discriminations or distributive judgments.

How foreigners might be fitted into this scheme is discussed in the Newfoundland reference *Report* of the Economic Council of Canada.³⁷ In general, they too would have catch quotas, but their rights to acquire more would be somewhat limited.

The manner of making massive decisions about species, age or condition would probably remain as difficult as with today's regulatory regime. Voting by fishermen would be conceivable, regarding the limited number of quota holders as a species of shareholder: their votes might be weighted in accordance with each holder's degree of participation in each region, class of catch or type of gear.

The supervision of the distribution of entitlements to fish should not be performed by the regulatory agency responsible for managing the fish stocks. Even under the present system of licencing, licencing should not be the concern of stock managers. The reason, already recognized in the use of separate agencies to manage buy-back schemes in fisheries, is stated at length by Scott and Neher.³⁸ The ideal would be something like the Torrens system of registration in the land market, relative to the system of zoning regulation. Government performs two roles, but keeps them separate. A better model perhaps is the division of authority between the management of common-property oil fields and the administration of a system of leases conveying certain rights to develop and produce oil. In Alberta, the former is run by the somewhat independent Energy Resources Conservation Board and the latter by the provincial minerals department. I am proposing here that independence be given to the body administering the registration and market in rights: so long as the two bureaucracies are separated it is a secondary question which should be an arm of day-to-day political policy and which should have its independent terms of reference. In the final part separation by responsibility to different levels of federal jurisdiction is proposed.

How should the initial distribution of quotas be made? Royal Commissioners know that the transition from regulation to rights is redistributive and therefore resisted. One feasible programme would be for the government to phase in a system of quotas by accepting the implicit claims to the catch that now are represented by fishing licence. Fishermen would be sold or given dated or perpetual quotas proportional to their recorded catches of the previous few years. This would not be easy. To deal with it Pearce in his 1981 report³⁹ recommends that the initial distribution should be accompanied by an injection of buy-back money as compensation to ensure that everyone is better off.

³⁷ Econ. Council of Cda., *Newfoundland: from dependency to self-reliance* (Hull, Que.: Cdn. Gov't Pub. Centre, Supply and Services Cda., 1980).

³⁸ *Supra* note 7.

³⁹ *Supra* note 36.

What is important is that the quota system itself will, through market pressures, tend to bring about the "right" number of vessels and men. When quotas are marketable and divisible, fishermen will buy, rent or pool their quotas so as to divide their time efficiently and to get workably large catches per vessel. This is the unique result of a quota system. Because there is little to be gained from buying licences under the alternative licence-to-fish system, transferable licencing would not bring about a diminution in the amount of catching power. Buying back vessels or buying-in entitlements by an official agency is necessary under licencing and an available alternative under quotas. In this procedure the agency uses a royalty tax on licences or quotas, a licence fee, the proceeds of an auction of licences or quotas, or some combination of these to reduce the number of vessels or the amount of fishing pressure. Pearse proposes a combination, plus an injection of funds from government. While such a subsidy has been criticized, it is probably preferable to the present subsidizing of vessels, gear and ports or to unemployment insurance.

Ideally, catch quotas should be specific to designated fish stocks, dates and places. In practice they would probably be an improvement over the licence system even if they were generally designated by such groupings as northern cod, Bay of Fundy herring, Pacific halibut and so forth. Conversely, catch quotas should not be specific as to the gear or type of vessel to use them, but should be tradeable between inshore fixed-gear and offshore trawlers of seiners in order to get the most mileage from the regime. This mileage comes from two benefits: a replacement of the distributive function performed by fishery managers by the initial distribution plus market dealings; and a reduction in the costly racing and capital stuffing that emerges when vessels compete for a scarce stock.

The foregoing has been a simple sketch of a property-rights (quota) scheme. It is one of a number of systems that could be assembled from standard regulatory components, having greater or lesser demands for information, marketability of entitlements and so on. Variants range from proprietary management by a small community of fishermen to detailed governmental controls and managements combined with scarcely-restricted, licenced, fisherman access. In practice most systems are pieced together to deal with a local situation, which may well be in a state of crisis at the time a regime is first adopted. Well-known alternative components include licences to enter a fishing ground, to land fish, to own a vessel or to use a certain gear. A licence or quota can be perpetual, for a fixed period of years, for its owner's life or annual. It can be transferable among owners, fisheries or vessels. If the transferability of an entitlement is through a market (or by government auction) it will, naturally, find its way into the hands of the bidder most willing to pay for it. This is usually an advantage because such a person may have a strong comparative advantage in fishing. It will be no advantage, however, if the market in entitlements is more perfect than the capital market on which funds for acquiring rights, or for investment in equipment, are acquired. Under these circumstances, as is the case with present-day licencing systems, marketable rights would tend to drift into the hands of those with the greatest borrowing power.

To avoid costly capital stuffing and racing behaviour by most vessels, it is necessary that before each season commences most fishermen believe that the official fleet Total Allowable Catch (TAC) (of which their quotas are percen-

tage shares) is not appreciably larger than their estimation of the fleet's catch for the coming season. This condition is not easy to satisfy. It is not sufficient, for example, for fishermen's expectations of the fleet's annual catch to be distributed symmetrically around a median that is less than TAC. This distribution would be adequate for a majority of fishermen to collectively vote for a policy of forbidding themselves to invest in vessels and gear in excess of that needed to land the catch at minimum costs. But in the absence of such fine-spun collective regulation, this distribution is not adequate in a quota system to deter those who expect that the sum of assigned quotas will exceed the TAC from individually acquiring personal insurance in the form of such investment. Ultimately, their misgivings will alarm other fishermen, who will also re-examine their expectations, and almost certainly, attempt to invest themselves. The condition to be satisfied, then, is that most fishermen must be seen by their brothers to have confidence that the sum of all quotas is well within the fleet's expected catch. This condition would be approximately satisfied if participants in the fishery, having adjusted their pre-season investment in crew, vessel and gear to the size of their assigned quota in the TAC, believe that any shortfall would impose a smaller loss, or a smaller short-run cost in extra hours of fishing and supplies, than additional prior investment. Further, because investment in capacity and speed is a long-run matter, this condition must be expected to hold during most seasons during the life of a fisherman's equipment. Finally, the expectation must be held not only by the fishermen themselves, but by anyone else who would be sufficiently harmed by a shortfall from the assigned quota to protect themselves by protective investment (by dealers or processing firms, for example).

These conditions would be least likely to be satisfied in a fishery having widely fluctuating annual catches. In such circumstances, the prediction of runs, catches and stocks is costly if not unobtainable. Consequently, both the fisherman's prior guess about his season's catch and the official prior estimate of the season's TAC are apt to be very wrong. As the uncertainty in such a fishery increases, we would expect the excess investment to approach the level reached if the quota system were not used, and fishermen or vessels merely had licences to fish. Note that the uncertainty need not be about unpredictable natural fluctuations: fishermen are also likely to overinvest if the accuracy of each tentative official TAC, the permanence of standing regulations or the reliability of the exclusiveness inherent in existing licencing systems are not trusted.

This means that any good regulatory system — one that does not invite cautious overinvestment — will be reliable and predictable in its decisions. When these decisions concern entitlements inherent in a licence or quota, there is much to be said for this becoming a conditional right, unlinked both to the management system that sets the TACs and the open periods, and to the politicians to whom the managers are responsible. The content of any entitlement indeed should be defined so that it is independent of management and politics. It follows from this criterion that a regime in which a quota does not carry an absolute right (for example, an absolute right to a certain percentage of each season's TAC) should have its entitlements reviewed and reworded so that something, however little, is guaranteed to the owner each year. If nothing of this nature can be done, the idea of rights, obligations and exclusiveness should, for that fishery, be abandoned.

It may have been suggested in these paragraphs that the choice of a regulatory system is predetermined by the organization costs inherent in each system in its application to a particular fishery. Perhaps this ought usually to be the case, but it is not. The choice is made politically. Politicians respond not only to the intensity and frequency of voter preferences on fisheries matters, but also to the need of obtaining the support of representatives of fishing constituencies and interests for other policies in their agenda or platform. Thus, the selection of fishing policies may be influenced by controversy concerning other matters, so that the number of "other matters" that the government is empowered or obliged to make policy about may be an important determinant of whether organization costs, or their distribution, or the distribution of fisheries rent, employment or patronage is the key consideration in selecting a fisheries regime. Bureaucrats and advisors must also have an important influence. Merely listing these influences will suggest, however, that the regime chosen will not be independent of the level of government at which the choice is to be made. The proportion of citizens interested in fisheries, the number of "other matters" to be resolved, and the power and doggedness of advisors and bureaucrats will vary with the size and level of the jurisdiction. It will be seen in the next part that organization costs also will vary with the level of jurisdiction.

V. A NEW SYSTEM OF FISHERIES REGULATION

What should be the roles of Ottawa and the provinces in selecting and organizing a fisheries regulatory system? In this section the capacity of the Breton-Scott model to answer this question will be considered. For brevity, the question can be put normatively, on the presumption that the aim of the assignment of powers over the fishery is to minimize organization costs.

Two cases may be distinguished. Consider first a small local fishery, such as that for an isolated groundfish or crustacean stock exploited by a local labour force, fleet, port and processing plant. Under these circumstances the fish are not vulnerable to the activities of outsiders — neither fish nor fishermen migrate. Organization costs would surely be minimized if the power to regulate this fishery were assigned to a jurisdiction close in size to that of the local fishing community. Unless there were economies of scale in such activities as search, signalling, and administration, these costs would only increase if a larger body, one at a higher level, encompassing more than one such fishery, were to be given regulatory powers. If, on the other hand, a level of government having jurisdiction over a territory smaller than the community exploiting the fishery were empowered to regulate the fishery, that government would be expected to have higher organization costs than in the higher, wider jurisdiction. This is because a more local government would have duties not only to administer regulations but also to co-operate, bargain or struggle with the other government(s) also empowered to regulate the same fishery. Unless there were powerful diseconomies of scale in administration (such as the disappearance of the self-enforcement possible among small numbers of the regulated), search, signalling, or migration, the costs of co-ordination would tell strongly against a very small regulatory unit.

The second case is an extension of that suggested by the very small jurisdictions mentioned just above. In this case there are many external

linkages in each fishery. Each stock is, or could be, fished by more than one gear and by vessels from more than one port. Each port's vessels exploit more than one stock. Finally, each stock is mobile between regions and mixes with other stocks in the catchable phase of migration. In brief, there are many communities, many fisheries, and many stocks and several gears. This nightmare actually confronts managers in Canada and abroad.

It seems clear that under such circumstances a single management — a government empowered to regulate having jurisdiction broad enough to encompass all these locations, fish and persons — would have decidedly lower costs of co-ordination than would smaller jurisdictions. Unless its enforcement, search, signalling, migrating and information costs were so high as to swamp these external costs, organization costs would be lower. The higher the government the more inclusive its jurisdiction. Indeed, regulation by either a central government or by a council of lower governments is most commonly to be expected in these circumstances.

In the United States and Australia for example, fisheries both within the three-mile limit and in internal waters are under coastal-state control. Most relations with foreigners, and most regulations governing offshore fisheries are under national control. Co-ordinative instruments to deal with interstate control are inadequate for the fisheries-regulation organization costs to be other than in excess of the minimum necessary. Australia has only six state-level fishing jurisdictions, so that co-ordination may not be too costly; but the United States has more than twenty jurisdictions attempting to manage small parts of a larger seamless ocean ecology.

Dissatisfaction with the co-ordination thus achieved, and realization that its Law of the Sea stance obliged each region to allow foreign fishermen to take what local fishermen disregarded, has recently led to a radical change in the United States' system. Now there are six or seven regional Fisheries Councils, with staffs, representing the member states and the federal government, and empowered to make many decisions applying both in inshore and in the extended fishing zones. Few Americans have much to say in praise, so far, of these embattled and hardworking bodies. But they do seem to represent a promising compromise between internalized national control of all fisheries, and dispersed local control of access to and investment in localized stocks and grounds.

The Canadian system, already described, is a second alternative. It appears to be workable now, though under great stress and pressure. Federal regulators essentially make all the tidal fisheries decisions from licensing to landing, making little distinction between provinces or communities; they do, however, liaise with the provinces over port, processing, pollution inspection, marketing and other onshore ramifications to the extent they see fit. The resource is essentially a fief of the federal Crown, under arrangements so strong that they overshadow provincial development, shipbuilding, processing and employment policies connected with fishing. Given their regulatory powers, it would be natural for the provinces to experiment with preserving their newly-acquired grounds for their own fishermen. Some fishermen would be locked in, others locked out, with the same fishermen sometimes newly-protected gainers and sometimes newly-excluded losers. Some fishermen

would consider moving their home ports to provinces from which they would have legal access to fishing grounds, others would invest in larger and speedier vessels for raiding the traditional grounds now closed to them. Many would be signalling vigorously, calling on their regulators to obtain for them access to old grounds, to exclude foreign raiders or to manage domestic grounds now subject to new pressures from fishermen who formerly fished elsewhere. In response, governments would be busy administering domestic fisheries, managing the new pressures, fending off outside raiders and, by force and bargaining, protecting migrating fish from being caught in other jurisdictions.

But not all fishermen and certainly not all provincial citizens would prefer an autarchic policy. Since the Maritime Union Study the provinces have shown a willingness to co-operate both to cut administrative costs and to achieve higher returns from their resources. To the extent that these people had their way, signalling and migration would induce governments to search for ways to manage jointly fisheries in a more certain way, or at least to obtain access for outside fishermen to managed fisheries in other jurisdictions. Furthermore, some boundary fisheries *must* be jointly managed.

While some of these activities merely repeat what some citizens and governments would be doing if the fishery were controlled by the federal government, those that stem from taking provincial maritime boundaries into account are new. Among these are the fishermen's costs of migrating and of extra signalling, although part of this would be transitional and not inherent in the new assignment of powers.

It can be argued that on the Atlantic coast this federal dominance is what one would expect, considering the level of organization costs that would be entailed by an assignment of powers to regulate fisheries to the provinces or to an even lower level of government. In this inquiry it is expected that the provinces' regulatory policies would be autarchic and protectionist. But a distinction must be made between constitutional powers and the policies pursued under them. Consequently, the possibility that some or all provinces would seek to manage overlapping fisheries without regard to their own fishermen's wishes must be kept open; although, many fishermen fish close to their home, and although fish, notably lobster, are not migratory over long distances. It would be impossible to protect either from the pressure of "outside" fishermen by drawing boundaries without cutting across the natural complementarities between multi-purpose fleets, ports and plants serving near and remote fisheries of overlapping seasons. Taking these managerial co-ordination costs into account, and recognizing that the borders of the maritime provinces were not drawn to enclose the neighbouring fisheries, it can be concluded that managerial organization costs, including those of citizens, fishermen and governments, would increase substantially under any policies.

In the above sentence the word "managerial" is used in a strictly allocative sense: where, when and at what cost are fish to be preserved and caught? In a broader sense fisheries regulation includes the organization costs of settling *distributional and proprietary* claims. These include the claims of citizens in different parts of Canada to the rent of the fishery, or to relief from the expenses of managing it (including claims of Atlantic province citizens in

particular); the claims of fishermen to exploit particular grounds; the claims of other fishermen to exclude the previous group; the claims of buyers and processors to their share of the landed catch, and; the claims of buyers in Canada and abroad to fish at lower prices. Today not all these claims give rise to organization costs because with the passage of time the various interests have migrated or otherwise adjusted to the present pattern of rights of access. Nevertheless, because political participation costs little and because access to fisheries once granted is rarely priced or taxed, individuals and groups have an incentive to assail constantly managers with conflicting demands for access and protection. The citizen organization costs arising from this battle are sometimes obvious, but those costs within the federal government tend to be lost in the general costs of government and of regulation, and hence are not recognizable. Thus it is not clear that *distribution* organization costs would be higher under provincial jurisdiction than they already are under federal jurisdiction. This uncertainty must be emphasized. It is quite possible that once adjustment had taken place, provincial fisheries policies would look after distributional and proprietary questions at lower organization costs (to all parties) than when such policies are made and administered by the federal government.

By providing these regulatory policies what distributional activities would be entailed? Internally, the governments would decide which of their own citizens (at what price) would have access to provincial fisheries, and which would fish in outside fisheries to which their provincial government had won some access. Externally, they would negotiate with outside governments on three subjects. These are: access to jointly-controlled (boundary) fisheries; access to fisheries controlled outside, and; access of outside fleets to internal fisheries (the subject of interception of migratory fish also has important distributional elements). To these should be added two additional subjects dealing with foreign (non-Canadian) users of provincial fisheries and with the interception of migratory fish in foreign and in outside waters. It seems possible that provincial organization costs replacing those now arising from federal distributive activity would be as low or lower. This is because under provincial jurisdiction, signalling about, and searching for, fishermen and voter response to distributional aspects of regulation would be simpler and less costly.

More debatable is the claim that provinces' external co-ordination costs could also be less. Admittedly, negotiating foreign access would be highly visible and contentious but much of it already goes on as part of Canada's external relations. Access by fishermen from other Canadian regions is also already politically and bureaucratically within the federal government. Given that fisheries are to survive biologically, access will have to be limited under either level of government. Deciding who shall gain by explicit intergovernmental bargaining is not necessarily more costly than implicit selection with selection within the federal government's offices.

In what follows, a preferred assignment of fishery regulatory powers and responsibilities will be described. To do so some assumptions will be made about the relative organization costs with respect to the level of assignment of regulatory functions: that management for the Atlantic provinces would be less costly if it were enacted and administered by the federal government, while

distributional and proprietary questions would entail equal organization costs at either level; for the Pacific region, with only one province, highly-migratory fish, and conflicts between gears rather than home ports, there need only be one level of regulatory jurisdiction for management and for distributional and proprietary questions of access, and; the choice of regulatory regime has been answered by the need to share offshore fisheries with foreign nations — foreign and domestic fishermen are to hold quotas to a share of each fishery's Total Allowable Catch. These quotas are to be transferable and divisible, subject to the paternalistic condition that certain grantees cannot divest themselves of their quotas — native Indians on the West Coast, and inshore fishermen in Newfoundland, for example. The Total Allowable Catch is to be set each year by fisheries' officers.

Who will regulate these fisheries, and who will choose who is to have access to them? This is the jurisdictional question. If the assignment of *all* powers over the fishery is to be decided by the expected level of permanent organizational costs, the lower level of costs under federal jurisdiction, stemming from the internalization of controls over mobile fleets and migratory fish, would be decisive. Under this criterion the present federal constitutional pre-eminence should be, and would be, continued.

However, if the assignment is to take separate account of managerial, proprietary and distributional questions, as is permitted in the written constitution, it is possible to contemplate a form of concurrent jurisdiction. The allocational and management questions would continue to be administered by the federal government, but questions of access, ownership, rent and revenue would become provincial matters. To the extent that this function would rely on provincial proprietorship, it would stretch the present constitution. Outside internal waters, the province has no ownership powers. The proposal above would, therefore, require some delegation from the federal government to the provinces. However, both highway-trucking and fishing licencing can be delegated now. Whether a system of transferable and divisible quotas can be given the status of something close to a real property regime and yet have its administration delegated to a government that is not responsible to its voters for its existence is a legal question to which there is no clear answer. If it is feasible, the necessary division of roles would harmonize with both the existing provincial jurisdiction over most lands and waters (and with the proposed award of indirect taxation powers over natural resources to the provinces, with respect to a royalty on catch or on the value of the right of catch) and over property and civil rights (as strengthened by the "notwithstanding" clause of 1981). The federal government's accustomed role as manager of fish stocks and umpire of the fishing derby would continue, relieved, however, of much of the task of deciding who shall fish or of arranging fish management to give each class of vessel, gear or fisherman an equal chance at the stocks during a short season.

I have argued that this assignment of powers would produce the lowest level of organization costs. The quota system has been used as an illustration, but the argument does not depend on this system being adopted. If the governments rejected quotas and kept the present system of intense and costly controls combined with the weaker licence system, the division of powers in-

licated above would still be appropriate. The provinces would be responsible for issuing licences to their own fishermen, perhaps at a price; the federal government would be responsible for controlling both gear and season openings. A licensing system would require closer and more costly liaison between the two levels, for every change in regulations would tend to change the meaning of the licence; a provincial change in the number of licences to use a certain class of vessel or gear would bring a concomitant federal change in regulations. That is why a quota system is preferable; but, quotas or licences, divided jurisdictions over management and right are predicted to bring the lowest organization costs. Intergovernmental liaison would be necessary under either system (not least for agreeing on rights for foreign-flag fishermen) with divided jurisdiction. Assigning all powers to the federal government would cut down liaison costs, but, as has been already argued, would increase or maintain costs arising from dissatisfaction about proprietary and distributional matters.

The traditional approach to jurisdictional questions depends on the efficiency argument rather than on organizational costs. Readers who dislike the latter as a determinant may wish to consider predictions given under more familiar heads. What would happen if the provinces were to have control over quota registries while the federal government controlled openings? Referring back to Part IV, the reader will see that the advantages of the quota system in preventing excess investment and racing will all be available. Furthermore there is no reason to believe that distributional questions would be decided any less fairly than at present, or than natural-resource related questions decided in the forestry, mineral or water industries elsewhere in Canada today. Much depends on the efficiency and fairness of the initial distribution of quotas.

One question from other resource-policy discussions has to do with what Professor Andrew Thompson once called the "unseemly competition" among provinces for industrial location and the associated employment and tax revenues. Opponents of federal arrangements often look for such instances, where lower-level jurisdictions are forced by monopolies, mobility, and their own poverty, to give too much in creating incentives for continuing existing, or seeking new, industrial locations. It would be possible in the scheme outlined here for the provinces having acquired rights in the market (or in the free-for-all when rights were initially distributed) to dispense them selectively to those whose activities or location they wished to attract. To some this is inefficient. Their ideal, a neutral set of provincial fiscal systems, is probably not consistent with federalism. To others it is bad because it is at the taxpayers' expense. Of course it is. Consider an example in which Newfoundland uses its oil wealth to buy fishing rights from Nova Scotians. Fearing that it would be stripped of a fishing industry, Nova Scotia could make sure that its industry did not disappear by matching the Newfoundland offer to Nova Scotia fishermen who wanted to sell out.

Some authors have fearfully insisted that provinces must be stopped from ruining themselves by thus disposing of their forests or minerals too selectively, too cheaply or too soon. In the case of the fishery their fear would probably be that under the regime of individual quotas the provinces would hold more quotas for their people than would be justified by the price that fishermen or provinces elsewhere would offer for them. As long as the federal government

fishery managers did not weaken and create more quotas than the fishery's technically allowable catch, little harm could come from such over-investment in quotas by provinces. Furthermore, the existence of a market in transferable quotas would help both to signal the extent of any over-investment and to modify or reverse such a policy at low organization costs.

Those who fear interprovincial competition also fear that provinces and their regulatory agencies will be unable to withstand industry pressure with the same resolution as the larger, richer, central government. If we examine such pressure under the fishery quota scheme we find two types. One would be pressure to change the "on-line" within-season fishing rules. Such pressure would, in fact, be directed against the federal government under this scheme. The other pressure would be to obtain fishing rights. Doubtless, politicians are always under pressure from vessel owners, communities, parishes, unions and processors for fishing concessions. However, once the right to land fish became marketable, politicians would find it difficult and unpopular to make gifts of quotas. The cost to the province would make such generosity just as conspicuous as if any provincial government today should give away oil leases or units of its public debt. It is only when a licence, quota or lease is unmarketable that politicians and bureaucrats find it possible, and are pressed, to give away portions of the public domain without limit and without criticism. Thus the enforcement costs to the provinces should not be high, while the management costs borne by the federal government would be reduced.

In this part I have both expounded the advantages of an individual catch-quota system, and recommended how this system should be based on existing federal and provincial powers. In effect I have advocated that one part of the regulatory function should be shifted from government to market. The function of overseeing this market in rights would be, and should be, primarily provincial. From this the burden on federal biological fisheries managers would be lightened and the function played by impersonal economic forces would increase. Incidentally, a role would emerge for the provinces analogous to that played under proprietary powers over their other natural resources.

From the constitutional-theory point of view, our way of looking at the present proposal is as follows. The power to regulate fisheries, a large and amorphous power, should be assigned concurrently to the two levels of government. Co-ordination activity would then lead to a division of roles between them. The federal government would manage the fishery and its environment, subject to co-ordination with conflicting activities in the province. The provincial government would manage a market in fishery quotas, subject to co-ordination concerning the Total Allowable Catch as set by the federal managers. If a royalty, boat licence or other management system were instead chosen, co-ordination and bargaining would lead to a somewhat different division of roles, and different needs for co-ordination and administration. The present division of powers over the fishery, however, can be conjectured to have emerged from an understanding of organization costs, so that any system of regulation would work best when the comparative advantages of both levels of government are realized.